

WHAT IS CLAIMED IS:

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1 1. A valve prosthesis (9), preferably a cardiac valve prosthesis, for implantation
2 in the body and comprising a collapsible elastical valve (6) which is mounted on an
3 elastical stent (1) wherein the commissural points (5) of the elastical collapsible valve
4 (6) are mounted on the cylinder surface of the elastical stent (1) characterized in that the
5 stent is made from a radially collapsible and re-expandable cylindrical support means
6 (7,8,24) for folding and expanding together with collapsible valve for implantation in
7 the body by means of a technique of catheterization.

1 2. A valve prosthesis according to claim 1, characterized in that the support
2 means (7,8) is made of thread structure (2,3).

1 3. A valve prosthesis according to claim 2, characterized in that the thread
2 structure (2,3) comprises several spaced apices projecting from the one side of the
3 cylindrical structure and in direction along the longitudinal axis of the cylinder and that
4 the commissural points (5) of the valve (6) are attached to the projecting apices.

1 4. A valve prosthesis according to claim 3, characterized in that the elastically
2 collapsible valve (6) is a biological trilobate valve.

1 5. A valve prosthesis according to claim 4, characterized in that stent (1) is
2 made from a stainless steel wire (2,3) folded in a number of loops (4) and bended
3 according to a circle and welded to form a closed ring (7,8), that the stent comprises two
4 or more such closed rings which are mutually connected end to end to form the
5 cylindrical thread structure (2,3), that three of the loops (4) in the external ring are
6 folded with a greater height than the remaining loops to form the apices to which the
7 commissural points of the biological valve are attached.

1 6. A valve prosthesis according to claim 5, characterized in that each of the
2 rings (7,8) of the stent (1) is made from a wire having a diameter of 0.55 mm and a loop
3 height of approximately 8 mm and approximately 14 mm for the three greater loops, and

1 that the cylindrical thread structure produced and the collapsible valve mounted thereon
2 in a folded state have an outer diameter of approximately 10 mm and in expanded state
3 an outer diameter of approximately 30 mm.

1 7. A valve prosthesis according to claim 5, characterized in that three or more
2 mutually attached rings (7,8) placed on top of each other are used and that the stent (1) is
3 made to be fixed through the expansion at one point in the channel where the valve
4 prosthesis is inserted. which point is different from the point where the valve is
5 mounted in the stent.

1 8. A valve prosthesis according to claim 1, characterized in that the cylinder
2 surface of the support means is closed to form a tubular element (24)

1 9. A balloon catheter (11) for use in implantating a valve prosthesis (9)
2 according to claim 1 and comprising a channel (15) for injection of a fluid for the
3 inflation of the balloon means (13) of the catheter and an insertion cap (11A) wherein
4 the balloon means (13) of the catheter and a collapsible valve prosthesis (9) mounted
5 thereon are located during the injection, characterized in that the balloon means (13) are
6 provided with profiled surface (14) which is made to ensure a steady fastening of the
7 valve prosthesis (9) during the withdrawal of the balloon means (13) from the protection
8 cap (11A) and the subsequent inflation for expanding the stent (1)

1 10. A balloon catheter according to claim 9, characterized in that the profiling of
2 the surface is made by beads (14) or buds on the surface of the balloon means.

1 11. A balloon catheter according to claim 10, characterized in that the beads
2 (14) are placed in pairs in a number from four to eight along lines parallel with the
3 longitudinal axis (19) of the balloon means and with a spacing corresponding to the
4 height of the stent (1) used .

1 12. A balloon catheter according to claim 9, characterized in that the profiling of
2 the surface is made by an indentation which is formed in the surface of the balloon
3 means (13) with an extension corresponding to the height of the stent (1) used.